

FEBRUARY 2024

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Micro-Examiner

Steelmaking: Then and Now

During my personal experience with steel product development and manufacturing over the past 60 years I have witnessed and participated in many technological changes that have resulted in dramatic improvements. Changes in melting, refining and casting methods have improved safety, efficiency, and product quality while reducing environmental impacts. The technological changes and the manner in which they improved the control of chemical composition, hardenability, surface quality, internal quality, and yields are presented and discussed.

Bio: Robert (Bob) Cryderman, FASM, began his interest in steel at Cass Technical High School in 1962 where he completed classes in steel metallurgy and welding. He started working as a research technician at Climax Molybdenum in 1964 while attending classes at the University of Michigan. He graduated from the University of Michigan with BSE (1968) and MSE (1970) degrees in Metallurgical Engineering. In 1973, after nine years at Climax (51 years ago), he began employment in the steel industry at Jones and Laughlin Steel in Pittsburgh where he conducted research on steel products and processes and moved into managing metallurgy and quality at the Aliquippa Works; an integrated steel plant producing 3.5 mm tons/year for sheet, tubes, rods and bars from ingots. In 1981 Bob moved to CF&I Steel in Pueblo, CO as Manager of Quality, Metallurgy, and Process Development during the complete conversion of Steelmaking from Blast Furnace/BOF to Electric Furnace, followed by conversion from ingots to 100% continuous casting. Bob moved to North Star Steel, Monroe, MI in 1995 as Manager of Quality and Metallurgy to facilitate the conversion of steelmaking for bars from a merchant caster to casting Special Bar Quality billets for automotive and heavy equipment applications. After retiring from industry, Bob joined the Advanced Steel Processing and Products Research Center at Colorado School of Mines as a Research Professor in 2012 where he has focused on the metallurgy of products produced from Bars and Rod, especially surface hardening and short time heat treatment. Bob served as Secretary of the Heat Treat Society for five years, has published over 40 articles and has received nine patents on steel products. He is currently a member of the ASM Detroit, the Heat Treat Society, SAE, AIST, and TMS.



Speaker
Robert (Bob) Cryderman, FASM
Colorado School of Mines



Tech Chair
Daniel Baker, Ph.D
Senior Metallurgist, LIFT

ASM-Detroit Chapter Recognizes Anniversary Memberships at our February 12th Meeting

The ASM-Detroit Chapter will acknowledge individuals who are eligible for a membership anniversary award at the February 12th chapter meeting in recognition of membership support of the ASM International Society and the Materials science and engineering profession. Awards will be presented to Detroit Chapter Members who have sustained an ASM membership for 5-15-25 years, or if they met the qualifications of a life member (65 years of age, age + sustained membership duration > 100). Awardees for this year will be receiving an email prior to the February 13th meeting letting them know they are due for an award. Please contact Julie Nimer at asmdetritchapter@gmail.com if you have any additional questions about membership awards.

ASM-Detroit Membership Night and Dinner Meeting with DWAFS

Monday, February 12, 2024 • 5:30 – 8:00 p.m.

Speaker: Prof. Robert Cryderman, Colorado School of Mines

Topic: "Steelmaking: Then and Now"

Location: The Tapestry, 24580 Evergreen, Southfield, MI 48075

Social Hour 5:30 pm • Dinner 6:30 pm • Announcements 7 pm • Speaker 7:15-8 pm

****Special 23-24 Season Rate of \$20pp with a Reservation** (\$5 for Students)**

For reservations e-mail to AsmDetroitChapter@gmail.com before Thursday, February 8th

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2023-2024 ASM-Detroit Chapter Executive Board

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Peg Jones
ASM Teacher's Camp



Nicholas Lessnau
ASM Detroit Chapter
Chair, 2023-24

Chair's Note

Happy New Year to all our members. I am excited for 2024. New year, new Nick.

STUDENTS, you're running out of time. The clock is ticking. Hurry. Applications for this year's scholarships are due February 4, 2024. This year, the Detroit Chapter is offering three scholarships of \$1,500 each. As in year past, we are awarding the Marion Semchyshen and James A. Mansfield Scholarships. New this year is the Leo and Betty Blazok University Scholarship. The Blazok Foundation provided a generous donation to the chapter, and we could not think of a better way to put it to use than helping to support the next generation of local materials engineers. The whole Detroit Chapter Board is looking forward to reviewing this year's candidates.

The 2024 portion of our programming is kicking off with our very own Prof. Robert Cryderman. If you happened to miss the first page of this newsletter, you better flip back and get the scoop on Bob's talk. Bob has been a great addition to the Detroit Chapter Board these past few years and I am looking forward to starting 2024 with him. Don't forget that his February 12th talk is also Membership Night.

Last year we added four great new board members to the Detroit Chapter. Tristan Brohm, Nikki Tiernan, Yi Liu, and Max Mayhew have received their positions with open arms and minds. I am hoping that this year we can get some more great additions to the board. Thank you, Tristan, Nikki, Yi, and Max, for your time and efforts. They don't go unnoticed. If you have the burning desire to join these fine folks in making a difference in our local materials community, feel free to reach out to me.

Looking forward to seeing you all in February and the following months.

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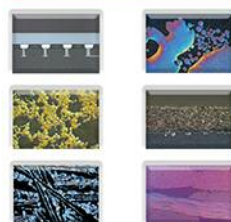


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Call for Judges: “Best Materials” Projects at Science and Engineering Fair of Detroit

Witness the future Materials Scientists in action! We are seeking chapter members to judge the “Best Materials Project” at the 67th (2023-2024) Science and Engineering Fair of Metro Detroit on Wednesday, March 20, 2024, at Huntington Place (formerly Cobo Center).

Our chapter sponsors the “Best Materials Project” award for both Junior (6th – 8th grade) and Senior (9th – 12th grade) categories each year. To select awardees, a team of chapter members will judge the projects, starting with an orientation at 8 AM and concluding by 11:30 AM. Enjoy a complimentary breakfast as a token of appreciation for your participation.

Become an ASM judge for this program by emailing Julie Nimer at asmdetroitchapter@gmail.com. Your involvement is vital for the success of this event.

Save the Date for the ASM Detroit & DWAFS Golf Outing: August 9th!

Get excited for a fantastic day of golf at Fellows Creek in Canton, MI, on Friday, August 9, 2024! Whether you're a seasoned golfer or just starting out, this event is for you. Imagine beautiful green courses, clear skies, and the sound of clubs hitting golf balls. Even if you're not a golf pro, the friendly atmosphere and scenic setting at Fellows Creek will make this outing memorable. So, grab your clubs, practice your golf clap, and join us for a day of fun, laughter, and the pursuit of the perfect swing! We'll see you on the greens!

ASM Detroit Chapter 2023-2024 Program

February 12, 2024
MEMBERSHIP NIGHT

PROF. ROBERT CRYDERMAN, FASM
“Steelmaking: Then and Now”
Location: The Tapestry, Southfield

March 11, 2024
WOODSIDE LECTURE
HEAT TREATERS NIGHT

DR. KATHY HAYRYNEN, FASM
Location: Livonia Marriott

April 8, 2024
SPRING JOINT ASM/AFS MEETING

ROBERT HILL, Solar Atmospheres
“Oil Quenching”
Location: Solar Atmospheres – Chesterfield, M
(Tour of Stahls Automotive before Dinner Meeting)

May 6, 2024
**NATIONAL OFFICERS NIGHT/
SUSTAINING MEMBERS NIGHT**

PRADEEP GOYAL, FASM
ASM International President (2023-2024)



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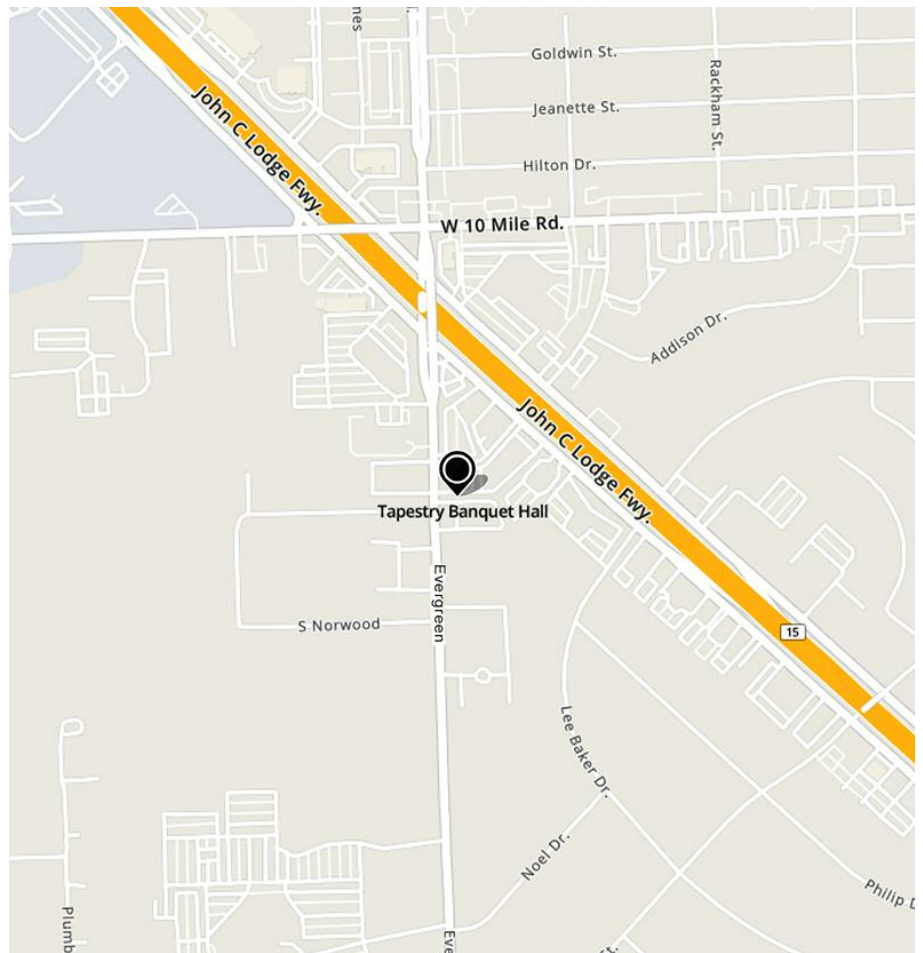
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ASM-Detroit Membership Night MEETING LOCATION

Monday, February 12, 2024
5:30 – 8:00 p.m.

The Tapestry
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Thanks to Fluxtrol's generous donation we are able to offset the dinner cost at our monthly chapter dinner meetings for our STEM Outreach attendees. These attendees include: Teacher Scholarship Winners, University Scholarship Winners, Community College Scholarship Winners, Metro Detroit Science Fair Winners, and ESD Future City Winners.

College and university students can also attend our ASM Detroit Chapter dinner meetings for just \$5 thanks to this generous donation!

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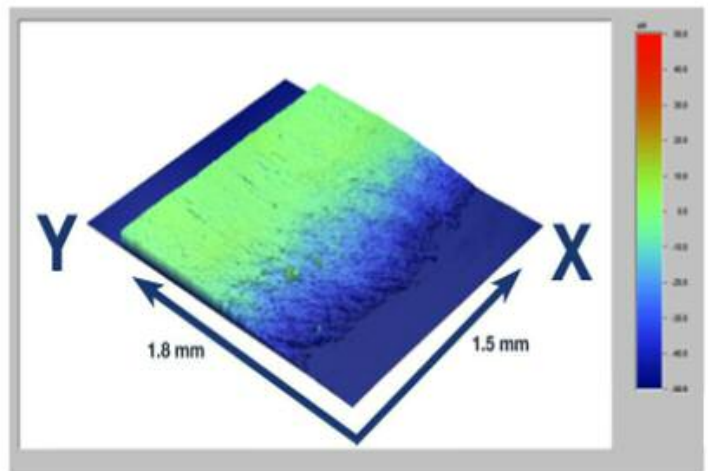
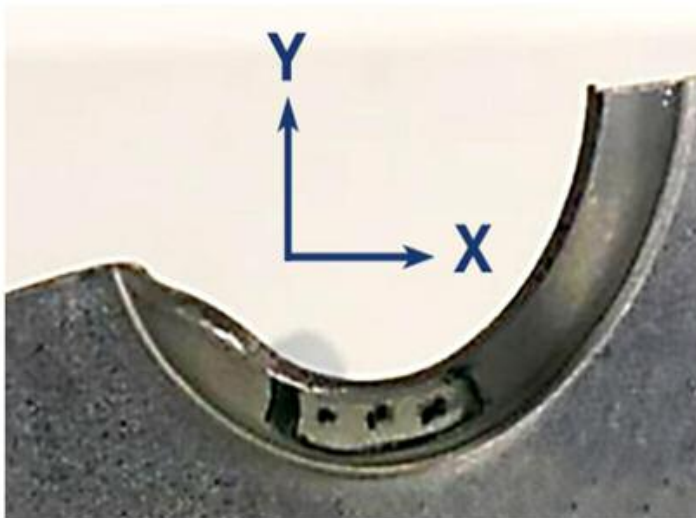


Register for the Metal Forming Tribology/Surface Metrology Workshop

Thursday, March 28th, 7:30am–1:00pm EST

Michigan Metrology, Bruker, and ASM-Detroit are sponsoring a complementary Metal Forming Tribology/Surface Metrology workshop on March 28, 2024, 7:30am–1pm.

The morning session will include a light breakfast and presentations from Martinrea International, General Motors, American Steel Partnership, EQS, Michigan Metrology, and Bruker. Following a complimentary lunch, an open house will include demonstrations of various Bruker instruments.



3D optical profiler measurement of a trim edge of a stamped feature, showing shear and tear regions

The morning session will feature presentations including:

The Effect that Trim Edge Quality has on the Feasibility of "Stretch Flanging - Gen3 AHHS"
Vince Millioto, Martinrea International US Inc.

Steel Grade Selection Strategies to Mitigate Cut Edge Cracking
Danny Schaeffler, Ph.D. Engineering Quality Solutions

Specifying Body Panel Surface Texture for Paint Appearance
Donald K. Cohen, Ph.D., Michigan Metrology

High Speed Trim Edge Form/Texture Measurements
Faran Misaghi – Bruker Alicona

To register for this **FREE** workshop, email: ASMdetroitchapter@gmail.com.

Questions on the event should be directed to Don Cohen of Michigan Metrology, (734) 953-5030, doncohen@michmet.com